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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/510,417

Applicant(s)

KITAHARA ET AL.

Examiner

DEVON C. KRAMER

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13 and 15-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date 09/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 1-11 and 15-18 are objected to because of the following informalities:

Claims 1 and 15 lines 4-6 recites, "the cylinder and the piston passes". It is believed that this should read --the cylinder and the piston--;

Claim 1 line 14, "the pump chamber is decreases" should be --the pump chamber is decreased--;

Claim 5 line 4, "defined on a side of by a wall of the top portion" should be --defined by a side of a wall of the top portion--;

Claim 5 lines 5-6, "the piston passes" should be --the piston--.

The claims are replete with grammatical errors. It is believed that the claims are a direct translation of a parent set of claims. Applicant is asked that when replying to this office action, the claims are reviewed to ensure correct grammar and antecedent basis for the claim limitations.

. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not support that the cylinder head is attached to the cylinder by gluing or adhesion in an air tight manner as required by newly amended claim 1. Further, no where in the specification does it appear to state that the cylinder and cylinder head form an air tight connection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshiage et al (JP 8-189468) in view of Masamura (6024366).

In re claim 1, Oshiage et al teaches a piston pump capable of use as a blood pressure measuring device comprising: a cylindrical cylinder (7) having a cylinder head (8, 10); a piston (14) reciprocating inside the cylinder; a suction port (16) through which gas is sucked into the pump chamber; the pump chamber defined between the cylinder and piston; an exhaust port (22) through which gas exhausts from the gas chamber; wherein the piston pump sucks the gas through the suction port and discharges the gas through the exhaust port as the volume of the pump chamber is changed by reciprocating motion of the piston; wherein the suction port is arranged at a top of the

piston with a suction valve, which opens as the volume of the pump chamber is increased; wherein the exhaust port is arranged at a top of the cylinder with an exhaust valve, which opens when the volume of the pump chamber is decreased. Oshiage appears to be silent to how the cylinder head is attached to the cylinder.

Masamura teaches a cylinder head (28) attached to a cylinder (24) by welding.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have attached the cylinder head of Oshiage to the cylinder by welding as taught by Masamura merely to provide a strong fluid tight connection for the head.

In re claim 2, please note valve 21 is on a top face of the piston in Oshiage.

In re claim 4, broadly interpreted, Oshiage teaches the piston having an opening (14) communicating with the suction port; wherein the opening is arranged outside the pump chamber so as to allow air sucked through the suction port into the pump chamber to pass a plenum capable of storing air to communicate with the opening; wherein the plenum is encompassed by an enclosure (1) having a plenum suction port (A); wherein the enclosure is a housing having a base portion fixed to the cylinder such that the base portion holds a motor (2).

IN re claim 7, Oshiage teaches a drive assembly for a having a piston engaging a coupling member (5) in such a manner that the coupling member is capable of turning in a circumferential direction thereof; and wherein the coupling member is ring shaped and connected to a connecting member (14) such that the engaged piston is reciprocated inside the cylinder.

IN re claim 10, Oshiage teaches a top plenum (10) defined by a top enclosure fixed to the top portion of the cylinder and a motor housing (1A, 1) fixed at a position spaced apart by a predetermined distance from the top portion such that the cylinder is connected and fixed to at least a part of the motor housing; wherein the motor housing is composed of a base portion (1) fixed to the cylinder such that the base portion holds a motor for driving the piston and a cover portion (bottom housing portion of figure 1) disposed along the base portion such that the cover portion fastens the motor by sandwiching the motor with the base portion; wherein the cover portion and the base portion are engaged with a connecting mechanism capable of engagement and disengagement. Please note that anything connected to the housing in Oshiage can be considered the connecting mechanism because applicant has not provided any relationship with structure. For example, the motor can be considered the connecting mechanism because it is capable of being connected and disconnected from the housing.

Claims 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshiage et al (JP 8-189468) in view of Masamura (6024366) and further in view of Credle et al (6193109).

In re claim 3, Oshiage teaches an exhaust valve at a top face of a cylinder outside of the pump chamber, but lacks the teaching of the valve being umbrella shaped.

Credle teaches an umbrella shaped inlet (30) and exhaust valve (40).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have provided the exhaust valves of Oshiage with umbrella shaped valves merely as a design choice and to provide a simple cost effective valve structure.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Credle et al (6193109) in view of Oshiage et al (JP 8-189468).

IN re claim 5, Credle teaches a piston pump including: a cylindrical cylinder (12) having a top portion (near 30); a piston (50) reciprocating inside the cylinder; a suction port (above 30) through which fluid is sucked into a pump chamber (14); an exhaust port (above 40) through which fluid is discharged from the pump chamber; wherein the piston pump sucks the fluid from the suction port and discharges the fluid through the exhaust port as a volume of the pump chamber is changed by reciprocating motion of the piston; wherein the suction port is arranged at the top portion of the cylinder with a suction valve (30), which opens when the volume of the pump chamber is increased; and the exhaust port is arranged at the piston with an exhaust valve (40), which is umbrella shaped and is arranged outside the pump chamber and opens when the volume of the pump chamber is decreased.

Credle lacks the teaching of pumping a gas.

Oshiage teaches a similar pumping arrangement to pump gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have provided the assembly of Credle to pump gas as taught by

Oshiage merely as a substitution of fluids. The structure of Credle is capable of pumping a gas. Further, whether a pump pumps a liquid or a gas is a matter of design choice.

IN re claim 6, Credle teaches an umbrella shaped suction valve (30) inside the pump chamber.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshiage et al (JP 8-189468) in view of Masamura (6024366) and further in view of Spulgis (5188519).

IN re claim 8, the assembly of Oshiage as modified by Masamura lacks the teaching of the piston assembly claimed. Spulgis teaches a piston (14, 26) with a recess portion formed continuously in the circumferential direction of the piston and engaged with a coupling member (38), the recess portion including at least a part of a first predetermined spherical surface; wherein the coupling member has a projection portion formed continuously in the circumferential direction such that the projection portion corresponds to the recess portion, the projection portion including at least a part of a predetermined second spherical surface to engage with the recess such that the projection portion is capable of turning in the circumferential direction and in an axial direction.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have provided the assembly of Oshiage as modified by

Masamura with the piston connection assembly taught by Spulgis merely to provide flexible connection for the piston.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshiage et al (JP 8-189468) in view of Masamura (6024366) and further in view of Hatridge (3931755).

Both Oshiage and Masamura lack the teaching of a self-lubricating material on the piston. Hatridge teaches a piston with a self-lubricating material. (Col. 4 lines 63-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified the piston pump of Oshiage to include a self lubricating piston as taught by Hatridge merely to reduce friction within the pump thus increasing the efficiency.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshiage et al (JP 8-189468) in view of Masamura (6024366) and further in view of US Patent No. 4,343,314 to Sramek (Sramek).

In re claim 11, Oshiage and Masamura teach the piston pump according to claim 1 (see claim 1 rejection above) but fail to teach the following which is taught by Sramek: wherein the piston pump is connected to a blood pressure monitor (see Fig. 1 and Claim 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the piston pump apparatus of Oshiage et al/

Masamura in the blood pressure monitoring system of Sramek to achieve a blood pressure detecting system with a better precision (the measurements reflect the instantaneous blood pressure, column 2, line 5), and autonomous pumping means by having a motor based pump system. Please note that applicant has not claimed how the motor / pump are arranged in the blood pressure monitor.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,082,244 to Sigel et al.(Sigel) in view of US Patent No. 5,848,879 to Hansson (Hansson).

In re claim 13, Sigel teaches a method of producing a piston pump (10) including a cylindrical cylinder (14), a piston (20) reciprocating inside the cylinder; a suction port (38) through which gas sucked into a pump chamber defined by the cylinder and the piston passes and an exhaust port (64) through which the gas discharged from the pump chamber passes; the method comprising the steps of: producing a piston pump pre-assembly comprising the cylinder and a cylinder top portion in which the exhaust port is formed; (Column 5, lines 5-18) producing a piston pump by further assembling components to the piston pump pre-assembly (Column 5, lines 5-12). However, Sigel fails to teach conducting a leakage inspection of the piston pump pre-assembly which is taught by Hansson (Column 3, lines 47-56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of inspecting fluid leakage from the piston apparatus disclosed by Hansson in the piston producing method of Sigel to achieve a

more reliable and leakage free system by doing a prior inspection of the piston to identify and eliminate leakage. Please note that by providing fluid during the leakage test recited by Hansson, some pressurization must take place.

Claims 15-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshiage et al (JP 8-189468) in view of Spulgis (5188519).

In re claims 15-16, Oshiage et al teaches a piston pump capable of use as a blood pressure measuring device comprising: a cylindrical cylinder (7) having a cylinder head (8, 10); a piston (14) reciprocating inside the cylinder; a suction port (16) through which gas is sucked into the pump chamber; the pump chamber defined between the cylinder and piston; an exhaust port (22) through which gas exhausts from the gas chamber; wherein the piston pump sucks the gas through the suction port and discharges the gas through the exhaust port as the volume of the pump chamber is changed by reciprocating motion of the piston; wherein the suction port is arranged at a top of the piston with a suction valve, which opens as the volume of the pump chamber is increased; wherein the exhaust port is arranged at a top of the cylinder with an exhaust valve, which opens when the volume of the pump chamber is decreased. Oshiage appears to be silent to how the piston is connected.

Spulgis teaches a connecting member (26, 38) for attaching to a piston that is capable of turning in a circumferential direction.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have provided the piston assembly of Oshiage with the coupling member of Spulgis merely to provide a connection that is flexible.

In re claim 18, the claimed references are recited as mentioned in the rejection of claim 4 above.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshiage et al (JP 8-189468) in view of Spulgis (5188519) and further in view of Credle et al (6193109).

In re claim 3, Oshiage teaches an exhaust valve at a top face of a cylinder outside of the pump chamber, but lacks the teaching of the valve being umbrella shaped.

Credle teaches an umbrella shaped inlet (30) and exhaust valve (40).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have provided the exhaust valves of Oshiage with umbrella shaped valves merely as a design choice and to provide a simple cost effective valve structure.

Response to Arguments

Applicant's arguments with respect to claims 1-11 and 15-18 have been considered but are moot in view of the new ground(s) of rejection. Please note the amendment to the claims reciting that the pump is for a blood pressure measuring

device is in the preamble and is considered intended use. In re claim 13, please note that checking the system for leaks in Hansson must include some pressurization of the system.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to **DEVON C. KRAMER** at telephone number (571)272-7118.

Devon C Kramer
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/Devon C Kramer/
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